

COUNTY COUNCIL
OF
HARFORD COUNTY, MARYLAND

BILL NO. 09-04

Introduced by Council President Boniface at the request of the County Executive

Legislative Day No. 09-03

Date January 20, 2009

AN ACT to repeal and reenact, with amendments, Section 109-8, Solid waste management plan, of Article I, General Provisions, of Chapter 109, Environmental Control, of the Harford County Code, as amended; and to amend Section 3.6.2, Harford Waste-to-Energy Facility, Section 4.4.3, Evaluation of the Harford Waste-to-Energy Facility (HWTEF), and Section 5.5, Waste to Energy, of the Harford County Solid Waste Management Plan, adopted on March 1, 2005 by Bill No. 05-02; to provide that the Solid Waste Management Plan as revised from time to time shall be the County's Official Plan; and to provide for revisions to the Solid Waste Management Plan to reflect the necessary development, construction and operation of an expanded Harford Waste-to-Energy Facility.

By the Council, January 20, 2009

Introduced, read first time, ordered posted and public hearing scheduled

on: February 17, 2009

at: 6:30 p.m.

By Order: Barbara J. O'Connor, Council Administrator

PUBLIC HEARING

Having been posted and notice of time and place of hearing and title of Bill having been published according to the Charter, a public hearing was held on February 17, 2009, and concluded on February 17, 2009.

Barbara J. O'Connor, Council Administrator

EXPLANATION: CAPITALS INDICATE MATTER ADDED TO EXISTING LAW. [Brackets] indicate matter deleted from existing law. Underlining indicates language added to Bill by amendment. Language lined through indicates matter stricken out of Bill by amendment.

WHEREAS, on March 1, 2005, the Harford County Solid Waste Management Plan ("Plan") was adopted; and

WHEREAS, the Plan included the currently existing Harford Waste-to-Energy Facility ("HWTEF") and reflected that Harford County was considering options for the expansion of the HWTEF in the future; and

WHEREAS, it has since been determined that, because of air quality requirements, energy needs of the Aberdeen Proving Ground which are only partially met via the sale of electricity and steam generated by the HWTEF and the need for more through-put capacity than can be created through expansion of the existing facility, the construction of a state-of-the-art replacement facility adjacent to the HWTEF is necessary in order to expand its capacity and is the most economically advantageous option available to the County; and

WHEREAS, the Plan must be revised to reflect that the County will participate in the development, construction and operation of an expanded HWTEF.

Section 1. Be It Enacted By The County Council of Harford County, Maryland that Section 109-8, Solid waste management plan, of Article I, General Provisions, of Chapter 109, Environmental Control, of the Harford County Code, as amended, be, and it is hereby, repealed and reenacted, with amendments; and that Section 3.6.2, Harford Waste-to-Energy Facility, Section 4.4.3, Evaluation of the Harford Waste-to-Energy Facility (HWTEF), and Section 5.5, Waste to Energy, of the Harford County Solid Waste Management Plan, adopted on March 1, 2005 by Bill No. 05-02, be, and they are hereby, amended, all to read as follows:

Chapter 109. Environmental Control

Article I. General Provisions

§ 109-8. Solid waste management plan.

The Solid Waste Management Plan, dated January 2005, as adopted by Bill No. 05-02, AS SUBSEQUENTLY AMENDED FROM TIME TO TIME, is incorporated by reference as part of this chapter as though fully stated herein, and is hereby declared to be the County's Official Solid

1 Waste Management Plan.

2 **Harford County Solid Waste Management Plan**

3 **3.6.2 Harford Waste-to-Energy Facility**

4 Most of the non-hazardous municipal solid waste from Harford County is [processed]
 5 CONVERTED INTO RENEWABLE ENERGY at a facility known as the Harford Waste-to-
 6 Energy Facility (HWTEF). THE STEAM GENERATED PROVIDES ABOUT 50% OF THE
 7 STEAM NEEDS OF THE EDGEWOOD AREA OF APG. WITHOUT THIS STEAM, THE
 8 ARMY WOULD HAVE TO BURN OIL OR GAS.

9 Tires delivered directly to the HWTEF by licensed haulers as well as tires collected at the
 10 HWDC [are burned as a supplementary fuel] ARE CONVERTED INTO ENERGY throughout
 11 the year but mostly from November to April. The HWTEF was developed for Harford County
 12 by the Northeast Maryland Waste Disposal Authority (the Authority) under its revenue bond
 13 financing authority. The facility is owned by the Authority on behalf of Harford County and
 14 operated by Energy Recovery Operations, Inc. (EROI).

15 Harford County [now] controls all tonnage processed in the HWTEF.

16 In the facility, waste is combusted in a controlled two-stage thermal oxidation process. In
 17 the first stage, waste is combusted in a nearly air-starved environment and is thoroughly
 18 converted to its further oxidizable gases. Air is added to these gases in a large second chamber
 19 where time, temperature and turbulence assure complete oxidization of the products. The heat
 20 released is used to make steam from water and the steam is piped to the Edgewood Area for use
 21 in heating and cooling buildings. The U.S. Government purchases the steam under a supporting
 22 long-term commitment which contributes to the relatively low scheduled net cost to Harford
 23 County. Although Harford County uses private-sector services for the operation of its waste-to-
 24 energy facility, the County maintains complete operating control over the disposal of the

1 remaining residue (ash).

2 The site of the HWTEF is a 13-acre parcel of land[, originally part of the reservation of
3 the] LEASED FROM THE Aberdeen Proving Grounds, situated immediately outside of the
4 Magnolia Road Gate, at the southern entrance of the Edgewood Area. It is bordered by an
5 Amtrak line on the west and Magnolia Road on the south, which provides normal access to the
6 site from Route 40 (approximately two miles west of the site). The site is made available
7 through a long-term lease to the Northeast Maryland Waste Disposal Authority from the U.S.
8 Government. The term of the lease expires March 17, 2016.

9 The quantities of materials processed at the HWTEF for the baseline period are presented
10 in Table 3-2. This database was generated via truck scales located at the site of the HWTEF.
11 The facility has processed an average of 122,455 tons of municipal waste per year during the
12 baseline period.

13 The types of material processed at the facility are governed by Federal law, Maryland
14 law, and County law. Acceptable Waste is essentially defined as household and commercial
15 garbage, trash, rubbish and refuse of the kinds normally collected or disposed of in the County as
16 a result of residential and commercial waste collection practices required by the County.
17 Unacceptable Wastes are defined consistent with all Federal and State prohibitions (e.g.,
18 controlled hazardous substances).

19 The HWTEF operates under several Maryland permits - including a Refuse Disposal
20 Permit and a[n] TITLE V Air permit - both issued by the Maryland Department of the
21 Environment. These permits are active and renewed periodically without complication. The
22 owner (Northeast Maryland Disposal Authority on behalf of Harford County Government) has
23 guaranteed to meet all environmental regulations. Stormwater management on the relatively flat

1 site includes two ponds. There is no liquid discharge from the processing operations on the site.
 2 All waste and residue are maintained indoors and any liquids draining from either stored MSW,
 3 from the process itself, or from stored residue are recycled back into facility processes.

4 [Emissions tests are conducted on an annual basis, and each year the emissions have been
 5 in compliance with federal and State standards, except for the State hydrochloric acid emissions
 6 requirements. The HWTEF entered into a consent order with the MDE in 1989 to develop a plan
 7 to meet the new State requirement for hydrochloric acid emissions. In 1990, MDE placed the
 8 provisions of the consent order into abeyance to determine if State requirements would be
 9 consistent with new Federal regulations that are a requirement of the Clean Air Act (CAA)
 10 Amendments of 1990.

11 One provision of the MDE Consent Order was to eliminate bulk loads of polyvinyl
 12 chloride waste from local manufacturers. (PVC is the only plastic containing chlorine). This
 13 was accomplished, and the 1992 annual stack test showed compliance with Maryland's new
 14 hydrogen chloride (HCl) emission requirements. However, stack testing in 1993 and 1994
 15 showed that continuous compliance with the new HCl requirements could not be assured without
 16 facility modifications. On April 8, 1994, independent from MDE enforcement, Harford County
 17 entered into an HCl Operating Plan agreement with the facility owner/operator to operate a cost
 18 effective, but experimental dry sorbent injection system. MDE approved the construction of the
 19 system after test runs, and the system is currently in operation.]

20 In 2003 the EPA finalized the amendments to the [CAA] CLEAN AIR ACT
 21 REQUIREMENTS FOR SMALL MUNICIPAL WASTE COMBUSTORS. These amendments
 22 [require the facility] REQUIRED ALL SMALL MWC FACILITIES to upgrade [its] THEIR
 23 pollution control equipment prior to November 6, 2005. Construction on improved air pollution

control equipment [began in the fall of 2004 and is scheduled to be complete prior to the EPA deadline. The MDE air permit will be modified to include the new EPA standards.] WAS COMPLETED BY THE REQUIRED DATE, AND THE SYSTEM IS IN OPERATION. The equipment upgrade [will include] INCLUDES the addition of a lime scrubber for removal of acid gases (HCL and SO₂), activated carbon injection for the control of mercury and the addition of a baghouse particulate removal system.

The anticipated remaining service life of the facility can be assessed on the basis of contractual provisions together with performance considerations. The normal useful life of such facilities is at least 30 years, and the existing steam contract expires in 2017.

Ash RESIDUE, THE BYPRODUCT OF COMBUSTION, generated by the facility has been, and will be, tested in accordance with guidelines promulgated by USEPA in 1994. The data from the tests conducted in accordance with the USEPA guidelines characterized the ash residue as nonhazardous.

Harford County [is currently evaluating options for the] HAS DETERMINED THAT THE FACILITY DOES NOT FULLY MEET CURRENT OR FUTURE WASTE DISPOSAL REQUIREMENTS AND HAS DIRECTED THE NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY TO EVALUATE OPTIONS FOR expansion OR REPLACEMENT of the HWTEF.

4.4.3 Evaluation of the Harford Waste-to-Energy Facility (HWTEF)

The HWTEF, which was purchased by the Northeast Maryland Waste Disposal Authority on behalf of Harford County in 2002, is a [mass burn] MODULAR facility that generates steam as a byproduct of waste combustion. The HWTEF may be modified for a variety of reasons during the ten-year planning period. Accordingly, the County [is considering options for

expanding] HAS DETERMINED TO EXPAND the capacity of the HWTEF.

[Current combustion capacity is not adequate and the number of bypasses is increasing annually. During the baseline period, the facility processed more than 80 percent of the County's municipal solid waste. Waste reduction and recycling will continue to substantially reduce the amount of solid waste requiring incineration or landfill disposal.]

The HWTEF was designed to be readily expanded by the addition of a fifth combustion unit within the existing enclosure, which would be integrated with the existing major equipment.

[Since the present facility provides only about half of the Army's Edgewood Area steam needs and since the existing steam transmission lines could readily supply the remaining steam needs,

expanding the facility could be economically feasible in the future. The added benefit of

supplying steam directly is that the County is spared the expense of converting the steam to electricity via a cogeneration facility. Any new combustion unit, nevertheless, should be sized to

best utilize the existing facility design, and could be sized at up to 150 tons per day (TPD)

maximum continuous 24-hour throughput rating (MCR), or "nameplate capacity." Expansion

could thus increase the facility's MCR to up to 510 TPD. The existing facility has processed

waste consistently at an actual throughput of over 90 percent of MCR with no decreased

performance and no reason to expect performance to decrease significantly over time. An

expanded facility could provide the County with up to 167,500 tons per year of processing

capacity for acceptable solid waste.] THE MAXIMUM SINGLE COMBUSTION UNIT THAT

COULD BE FIT INTO THE AVAILABLE FACILITY HAS A RATED CAPACITY OF 150

TONS PER DAY (TPD), WHICH WOULD INCREASE THE FACILITY'S OVERALL

THROUGHPUT CAPACITY TO 510 TPD, OR 167,500 TONS PER YEAR (TPY) OF

PROCESSING CAPACITY. THIS CAPACITY WILL NOT MEET HARFORD COUNTY'S

1 DEMANDS FOR FUTURE SOLID WASTE PROCESSING. THE EXISTING COMBUSTION
2 AND PROCESS EQUIPMENT WILL APPROACH ITS PROJECTED SERVICE LIFE IN
3 2016, SUGGESTING THAT MAJOR SYSTEM UPGRADES WOULD BE NECESSARY
4 WITHIN THE NEXT TEN YEARS. SINCE THE PRESENT FACILITY PROVIDES ONLY
5 ABOUT HALF OF THE ARMY'S EDGEWOOD AREA STEAM NEEDS AND SINCE
6 ADDITIONAL STEAM TRANSMISSION LINES CAN BE REPLACED OR UPGRADED TO
7 SUPPLY THE REMAINING STEAM NEEDS, EXPANDING THE FACILITY IS
8 ECONOMICALLY FEASIBLE.

9 Ash from the HWTEF is currently disposed in the HWDC and is being used as daily
10 cover off site. In accordance with EPA guidance, residue from municipal waste combustors in
11 Maryland is acceptable at a permitted municipal solid waste landfill. The owner of the HWTEF
12 has sampled and tested the ash annually in accordance with the EPA's Toxicity Characteristic
13 Leaching Procedure, and has shared the results with the County. The testing has shown that the
14 ash residue is classified as non-hazardous.

15 [New Federal and State regulations (pursuant to the Clean Air Act Amendments of 1990),
16 proposed in 1999, promulgated in 2000, and becoming effective in 2005 will define air pollution
17 control requirements applicable to the HWTEF. As discussed in Chapter 3, the facility is
18 currently operating with an MDE consent order and has developed a plan to reduce hydrogen
19 chloride emissions. The County will work with the Northeast Maryland Waste Disposal
20 Authority to define any facility modifications needed to maintain continuous compliance with all
21 State and Federal environmental regulations. The company installed a dry sorbent injection
22 system which is currently operational to further reduce HCl emissions.

23 The Harford County Resource Recovery Facility, the HWTEF, may be modified for other

1 reasons, requiring facility modifications not related to increasing combustion capacity. One
 2 possible avenue of improvement is to use steam which currently is vented to the atmosphere
 3 during the summer months.

4 It may become appropriate to have waste processing (recycling) capability, the ability to
 5 recover material not targeted by the County's recycling program, available at the HWTEF some
 6 time in the future. The establishment of any processing capability would require substantial lead
 7 time for project development. The County will continue to work with the Authority to evaluate
 8 improvement options at the HWTEF for the benefit of Harford County.]

9 EXPANSION OF THE CAPACITY OF THE HWTEF IS PLANNED AS A STATE OF
 10 THE ART REPLACEMENT MASS BURN WASTE TO ENERGY FACILITY WITH A
 11 NAMEPLATE CAPACITY OF 1500 TPD. THE REPLACEMENT FACILITY WILL BE THE
 12 PRIMARY SOLID WASTE ACCEPTANCE AND PROCESSING FACILITY FOR THE
 13 COUNTY. UNDER THE TERMS OF A MEMORANDUM OF UNDERSTANDING
 14 BETWEEN HARFORD COUNTY, BALTIMORE COUNTY AND THE AUTHORITY, THE
 15 AUTHORITY WILL DEVELOP, CONSTRUCT AND OPERATE THE FACILITY
 16 ADJACENT TO THE CURRENT HWTEF LOCATED AT 1 MAGNOLIA ROAD,
 17 JOPPATOWNE, ON ADDITIONAL PROPERTY LEASED FROM THE APG. HARFORD
 18 COUNTY AND BALTIMORE COUNTY WILL EACH HAVE A 50% ALLOCATION OF
 19 THE PROCESSING CAPACITY OF THE EXPANDED HWTEF, AND EACH COUNTY
 20 WILL BE RESPONSIBLE FOR MANAGEMENT AND DISPOSAL OF ITS
 21 PROPORTIONAL AMOUNT OF ASH RESIDUE. AN ANTICIPATED AGREEMENT WILL
 22 PROVIDE FOR SALE OF ENERGY, BOTH ELECTRICITY AND STEAM, TO APG. THE
 23 EXPANDED HWTEF WILL BE EQUIPPED WITH AIR POLLUTION CONTROL

EQUIPMENT MEETING ALL STATE AND FEDERAL STANDARDS AND REGULATIONS AND WILL INCLUDE PROVISIONS FOR RECOVERY OF FERROUS AND NON-FERROUS METALS FROM THE ASH RESIDUE.

5.5 WASTE TO ENERGY

When the HWTEF was constructed, plans were made and space was provided to add a fifth burner. [That fifth burner may be added during this 10 year planning period.] IT HAS BEEN DETERMINED THAT IN ORDER TO ACHIEVE EXPANDED CAPACITY, A REPLACEMENT FACILITY WILL BE CONSTRUCTED ADJACENT TO THE EXISTING HWTEF DURING THE 10-YEAR PLANNING PERIOD. THE EXISTING HWTEF WILL CONTINUE OPERATION UNTIL THE EXPANDED FACILITY IS COMPLETE AND OPERATIONAL. IT IS ANTICIPATED THAT THE WASTE PROCESSING EQUIPMENT AT THE EXISTING WTE FACILITY WILL EITHER BE RETROFITTED FOR ANOTHER USE, OR BE REMOVED AND RECYCLED. WITHIN THE NEXT SEVERAL YEARS HARFORD COUNTY WILL EVALUATE POTENTIAL USES OF THE PLANT BUILDING FOR FUTURE USES AS PART OF ITS SOLID WASTE MASTER PLANNING EFFORTS.

[The County is working with the NMWDA to oversee the required facility modifications which began in December 2004 to ensure compliance with State and Federal regulations. It is the intent of the County to ensure that the facility achieves compliance with all applicable regulations as rapidly as possible.

The NMWDA will continue to evaluate with the Army the potential for increased use of steam-driven chillers on the base. This could potentially make better use of steam generated in summer months. The potential for cogeneration of electricity at the plant for sale to BG&E, or

1 another potential user, has been evaluated, and found not to be currently economically viable.
2 The implementation of cogeneration will be reevaluated, as appropriate, if factors affecting the
3 economics change during the planning period.]

4 The County will work with the NMWDA to monitor alternative markets for ash
5 recycling.

6 Section 2. And Be It Further Enacted that this Act shall take effect 60 calendar days from the
7 date it becomes law.

EFFECTIVE: May 11, 2009

*The Council Administrator does hereby certify that
fifteen (15) copies of this Bill are immediately available for
distribution to the public and the press.*



Council Administrator

HARFORD COUNTY BILL NO. 09-04

Brief Title Solid Waste Management Plan -WTE Expansion

is herewith submitted to the County Council of Harford County for enrollment as being the text as finally passed.

CERTIFIED TRUE AND CORRECT

Barbara J. O'Connor
Council Administrator

Date March 10, 2009

ENROLLED

Billy Boniface
Council President

Date March 10, 2009

BY THE COUNCIL

Read the third time.

Passed: LSD 09-8

Failed of Passage: _____

By Order

Barbara J. O'Connor
Council Administrator

Sealed with the County Seal and presented to the County Executive for approval this 11th day of March, 2009 at 3:00 p.m.

Barbara J. O'Connor
Council Administrator



BY THE EXECUTIVE

David R. Craig
COUNTY EXECUTIVE

APPROVED: Date March 12, 2009

BY THE COUNCIL

This Bill No. 09-04 having been approved by the Executive and returned to the Council, becomes law on March 12, 2009.

EFFECTIVE DATE: May 11, 2009

Barbara J. O'Connor
Barbara J. O'Connor,
Council Administrator